

repeatedly observed the same thing, that very often when the spring opens dry Chinch Bugs will begin to increase and multiply in an alarming manner, but that the very first heavy shower checks them immediately, and repeated heavy rains put an almost entire stop to their operations. It is very true that nearly all insects will bear immersion under water for many hours, and frequently for a whole day, without suffering death therefrom; for although animation is apparently suspended in such cases, they yet as the phrase is "come to life again." But no insect, except the few that are provided with gills like fishes and extract the air out of the water, instead of breathing it at first hand, can stand a prolonged immersion in water without drowning. And it must be obvious to the meanest capacity, that an insect, such as the Chinch Bug, whose natural home is in the driest soil it can find, will have its health injuriously affected by a prolonged residence in a wet soil. It will be well, therefore, for farmers to bear in mind that, in a hot dry season Chinch Bugs are always the worst and that in a wet season it is impossible for them to do any considerable amount of damage."

The Carnivorous Insects that prey upon this bug are stated by Mr. Riley to be four kinds of Ladybird, especially the spotted species (*Hippodamia maculata*, De Geer), represented in Fig 49; which also preys upon the eggs of the Colorado Potato Beetle and a number of



FIG. 49.
Hipp. maculata.
Colours: Pink and black.

other destructive insects; and the Plain Ladybird (*Coccinella munda*, Say), represented in Fig. 50,—both of these species are found in Canada. A species of Lace-winged fly (*Chrysopa Illinoensis*, Shimer), and various other parasitic insects also share in the useful work of keeping this pest in check.

Artificial Remedies.—Many modes of combatting the Chinch Bug have been suggested from time to time in various agricultural publications. Those that appear to be most highly approved of are thus summed up by Mr. Riley: (1) "Chinch Bugs hibernate in the perfect or winged state in any old dry rubbish, under dead leaves, in old straw, in corn shucks and corn stalks, among weeds in fence corners, etc. Therefore all such substances should be burned up, as far as possible, in the spring. (2.) The earlier small grain can be sown in the spring, the more likely it is to escape the Chinch Bug; for it will then get ripe before the spring brood of bugs has had time to become fully developed at the expense of the grain. (3) The harder the ground is when grain is sown, the less chance there is for the Chinch Bug to penetrate to the roots of the grain and lay its eggs thereon. Hence the importance of fall ploughing and using the roller upon land that is loose and friable."

Should this insect, which is so terribly destructive in the United States, become at any time sufficiently numerous to cause alarm in this country, we shall feel much obliged to any observer who will afford us information upon the subject. It is not probable that it will become with us a permanent plague as it is in the West, but yet we may at any time receive a visitation from it and suffer great, even though only temporary, loss. Happily our Canadian variety, as we have noticed above, possesses wings too short to enable it to fly from place to place, we need therefore feel little fear that it will ever do more than affect some limited locality; what we should dread, however, would be an invasion from the long-winged American Bug.



FIG. 50.
Cocc. munda.
Colours: Light brick red, white and black.

4—THE GRAIN APHIS (*Aphis Avena*, Fabr.)

HEMIPTERA HOMOPTERA—APHIDÆ.

We come now to another insect pest that has been introduced into America from Europe, where it has been known for years as injurious to wheat, oats and other grain. Very little notice was taken of it, however, on this side of the Atlantic till the year 1861, when it attracted general attention from its appearance on grain crops of all kinds, both throughout Canada and the neighbouring States. Much alarm was excited by it, and the periodical press teemed with notices of its ravages and numbers, and with suggested remedies for its destruction. The next year it appeared again, but in much diminished numbers, and without creating the same alarm or excitement; since then, though observed here and there every year, it has remained in unnoticed obscurity, so far as the public in general are concerned. This change is not much to be wondered at, as it is the nature of this insect, like others species of plant lice, to appear suddenly in countless myriads in places where its existence even was